DOCUMENT RESUME

ED 179 286 PS 011 016

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TITLE Equilibration and Sensory Overload in the Pre-School Child: Some Effects of Children's Television Programming.
PUB DATE Sep 79
NOTE 20p.: Paper presented at the Annual Meeting of the American Psychological Association (87th, New York, NY, September 1-5, 1979)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Aural Stimuli: Cartoons; *Childrens Television; Educational Television; Rating Scales; *Stimulation; *Television Viewing; *Verbal Stimuli; *Visual Stimuli
IDENTIFIERS Sensory Overload

ABSTRACT

This paper reports an attempt to research sensory overstimulation in a variety of children's television programs by rating the level of visual sensory stimulation, auditory sensory stimulation, verbal response patterns and nonverbal response patterns in 45 television programs designed for pre-school children. The Television Rating Inventory (TVRI) was designed to objectively assess these four dimensions on a 7-point Likert-type scale ranging from helpful to harmful. Programs were assessed by four independent raters. A comparison was made among programs of the following types: (1) cartoon-animal characters (Pink Panther), (2) cartoon-individual characters (Fat Albert), (3) cartoon-group or family characters (Addams Family), (4) human live-action (The Three Stooges), and (5) educational programs (Mr. Rogers' Neighborhood). Results suggest that significant mean differences exist between the types of programming offered through educational children's programs and cartoon features, with the education programs being rated as more helpful than harmful to the pre-school child. Assessment and brief suggest that significant mean differences exist between the types of programming offered through educational children's programs and cartoon features, with the eudcation programs being rated as more helpful than harmful to the pre-school child. Assessment and brief discussion include issues and implications related to adversary roles, sexual stereotyping, aggressive behavior, identification and role models, and likely outcomes in observed childrens' behavior as a result of television viewing. (Author/SS)

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EQUILIBRATION AND SENSORY OVERLOAD IN THE PRE-SCHOOL CHILD: SOME EFFECTS OF CHILDREN'S TELEVISION PROGRAMMING

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This issue of involuntary subliminal television intoxication has recently gained international attention in the Florida v. Zamora legal suit. The critical issue with this case representing a minor who's original defense was one of temporary insanity due to the subliminal influence of the violence he had been exposed to through the television medium relates quite clearly to the theory and research which has emerged relating the impact of the television medium on family life (Miller, 1977). Clinical case studies have reported the effects of sensory overstimulation and disequilibrium in the immature organism. They suggest that some organisms may be unable to accomodate and assimilate sensory bombardment as might be available through the content and pace the television medium frequently offers in the American society. To assess the issue of sensory overload and disequilibration, a consideration of the theoretical basis and its implications for the child television viewer seems most appropriate.

The equilibration process, according to Piaget (1970), is a continuously operating process which propels the child through the ontogenetic sequence. This continuous process of equilibration gives rise to successive essentually discontinuous equilibrium states, which are seen as organized systems of action such as sensory-motor, perceptual, and concrete-operational processes, whose attributes are

discribable in terms of equilibrium. Although the equilibration process itself is thought to be homogeneous across development, the equilibrium stages which it generates are not seen as homogeneous. Piaget further contends that the equilibration process is the process of bringing assimilation and accomodation into balanced coordination. As one realizes the implications of this particular process of equilibration and the possible effects it may have on the pre-school child, a number of questions must be asked. What are the responsibilities of those of us who surround the child with a barage of learning readiness tasks; what are the problems associated with learning by non-person mediated methods such as television, and what are the conditions that make an under-three year old organism vulnerable to sensory stimulus overload?

Theory and research suggest that there is still a great deal to be learned about the interplay of sensory systems and the relationships between physiological and behavioral action systems in the human being. Such inquiries are needed however particularly into ways in which the individual organizes and integrates the biological, mental and affective functions within himself. In terms of the pre-school child, the child who Piaget suggests is discovering his world in its many faceted forms, who is engaging in the egocentric investigations of his physical environment, his social environment and his symbolic world within the limits of his preconceptual thinking, it becomes essential that we the parents, teachers, and researchers recognize and comprehend such implications on a coexisting and balanced readiness state within the child. It becomes, furthermore, an issue tied to the fact that the

the child must possess intact neurological equipment for processing the information and meanings, while at the same time the adults who provided the information must respect the child's thrust for performance in a framework of adaptive coping and offer stimulating experiences which do not overwhelm the child in his development thereby creating states of disequilibrium. Halpern (1973) has documented clinical case studies of children who were seen on psychiatric referral for what appeared to be a symptomatic reaction to sensory overstimulation. It was postulated that the "pace and content" of television programs such as Sesame Street may serve as causative factors for hyperactivity and disequilibrium in the pre-school child.

In addition to the auditory and visual techniques utilized to provide attractive stimuli to the television viewer, the "content" of the medium today provides both verbal and non-verbal stimuli to the viewer. Both the "pace" and the "content" as hypothesized by Halpern become the objective of this research project. Miller (1972, 1975) has studied the effects of verbal and nonverbal response styles on children. Both verbal and nonverbal response patterns were studied as they relate to the level of self esteem of children. As a measure of verbal response patterns, the descriptive-judgmental dimension was used. The empathy, genuineness and positive regard of the parent toward the child provided an estimate of non-verbal response patterns. Realized were a significant effect of judgmental or evaluative responses and low self esteem in children, whereas descriptive response patterns tended to yield higher levels of self esteem in children. The findings further suggested that the more descriptive the model the greater the self esteem of the child, while the more judgmental the

model the lower the self esteem of the child. Verbal and non-verbal response patterns available through childrens television programs points to the critical issues tied to the child's ability to identify with the television program and thus be effected by the variety of response patterns used. Television programs presenting a high level of evaluation response patterns directed towards key characters in the programming to which the viewing child may quickly identify, may effect on the child's perception of himself. For example, the non-verbal response patterns most characteristic of cartoon programming which tend to involve punching, kicking, and in other ways hurting key characters may also provide the young pre-school child with a derogatory experience in television viewing. Empirical research to date concerned with the influence of television programming on children has focused primarily on the effects due to exposure to violence and aggression. Bandura (1963), Leifer and Roberts (1972), Friedrich and Stein (1975) and Sommers (1976) have demonstrated that children will become more aggressive after exposure to aggressive television programming and demonstrated that children exposed to violent or aggressive television programming in its content would tend to resolve interpersonal conflict after watching full half-hour programs containing such violence with a high degree of aggressive behavior. While these variables are important, such a focus is somewhat limited by the range and type of influence which conceivably can be exerted through the television medium. A conceptual framework for a more comprehensive and systematic approach to research on the effects of sensory over-stimulation for pre-school children should include not only the dimensions of violence and aggression but the effects of visual and auditory sensory bombardment on the maturing organism. The present

study is an attempt to research sensory over-stimulation on a variety of children's television programs by isolating four specific variables related to television programming. It is hypothesized that the content of television programs viewed by pre-school children, primarily in the range from two to five years of age, may present elements of harm to the equilibrium and homeostatis of the pre-school child.

METHOD

Forty-five television programs designed particularly for viewing by children in the preschool to primary level range were rated. The Television Rating Inventory (TVRI) was designed with the purpose of objectively assessing four dimensions on a 7 point likert-type scale ranging from helpful to harmful. The four dimensions include: (1) visual sensory stimulation, (2) auditory sensory stimulation, (3) verbal response patterns, and(4) non-verbal response patterns frequently used in childrens television programming including animated and non-animated productions. For each television program rated, four raters were asked to independently rate each randomly selected program on each of the four above independent dimensions.

The observational categories of verbal and non-verbal response patterns have been chosen and adapted from the work Pusser (1972) who employed observational categories of reinforcement and punishment. The categories defined in the present study were refined and elaborated during a pilot project by the present investigator and the following observational categories were used:

1. Visual sensory stimulation involves any visual stimulus used to attract or keep the attention of the viewer. Examples such as repetive visual stimuli (i.e.) 8,8,8,... which flash on and off the screen or the use of any psychodelic phenomena used as visual sensory stimuli.

2. Auditory sensory stimulation involves any auditory stimulus used to attract or keep the attention of the viewer. Examples such as repetive auditory stimuli as "X Y Z, X Y Z, X Y Z,..." which are voiced, sung or any other way reproduced vocally are considered to be auditory stimuli.

3. Verbal response patterns involving the rendering of an evaluation, criticism or censure directed toward the person, his behavior or verbalization of "self" is asked to be rated. Giving positive attention such as verbal praise, or approval, laughing would be considered positive verbal response patterns. Verbal response patterns such as "stupid", "dummy", "shrimp", etc., when used in reference to a persons (1) behavior, (2) verbalizations, or (3) self, should be viewed as negative or harmful verbal response patterns.

4. Non-verbal response patterns involving the rendering of positive attention or praise, hugging, kissing, holding hands, giving tokens such as toys and food, a handshake, giving physical affection and acceptence, offering instrumental help, smiling would be considered to be positive non-verbal response patterns. Non-verbal response patterns such as hitting, shoving, pushing, connoting negative violence should be recorded as a negative verbal response pattern.

Each incidence of behavior concerning any of the four variables discussed was (a) recorded, (b) frequenced and (c) rated on a six point likert-type scale. Each rating was made on a continuing range from helpful toward the child's concept of self to harmful toward the child's concept of self. The design for Study I involved (1) a content analysis of the auditory and visual stimulation used on the twenty children's television programs employed in the study; (2) a comparison between the five categories of children's television programs on the frequency of occurrence of the auditory and visual stimulation. The five categories selected were: (1) cartoon-animal characters (e.g.) Pink Panther, (2) cartoon-individual characters (e.g.) Fat Albert, (3) cartoon-group or family characters (e.g.) Addams Family, (4) human live-action (e.g.) The Three Stooges, (5) educational programs (e.g.) Mr. Rogers' Neighborhood.

The design of Study II includes (1) a content analysis of the verbal and non-verbal response patterns that occurred on the twenty selected children's television programs; (2) a comparison between these two categories on the frequency of occurrence and its effects on the pre-school child.

RESULTS

Tables I and II provide a summary of the means and standard deviations of the fifteen different children's television programs assessed and the four variables used in their assessment.

Table I here

Table II here

Table III represent the means and standard deviations obtained for the five categorical groups on the variables of (1) level of visual stimulation, (2) level of auditory stimulation, (3) level of verbal response patterns and (4) level of non-verbal response patterns.

Table III here

T-tests to assess the significance between each of the five categories of programs lend themselves to some interesting results. The most striking mean differences reach significance when comparing the three separate categories of cartoon features (cartoon animal, cartoon human individual, cartoon human group) with the category of educational. In each of these situations significance was realized across all four variables in favor of the educational programs as being more helpful

than harmful to the pre-school child. Significance was not realized within or between cartoon categories. The comparable results for the cartoon animal category and the educational programs category is presented in Table III.

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Table IV

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DISCUSSION

The results obtained in Study I demonstrated significant mean differences between the cartoon category programs and the educational children's workshop programs in the frequency of occurrence of auditory and visual stimulation. In the comparative analysis of the five categories the most significant observation is how much more effective and more helpful the raters tended to rate the three educational programs as compared to the cartoon features and human live action. A case can certainly be made to substantiate the importance of assessing the level of auditory and visual stimulation so easily developed and utilized in cartoon and human live action features and it's effects on the young child. The content and intensity of such presentations through cartoon features tends to distort and present an inappropriate picture of interpersonal relationships (e.g. hitting, falling off cliffs, slamming ones head into the ground) as compared to the roles and models employed in educational programs assessed.

Study II demonstrated significant mean differences between the cartoon catagories both "animal" and "human-individual" and the "educational" children's television workshop programs in the frequency of occurrences of verbal and non-verbal response patterns. The

The implication from previous research (Feshbach, 1967; Pusser, 1972) is such that children, who are exposed to pro-social or punitive model type behavior will become more positive or punitive according to their exposure. The implication, therefore, is that the type of television programming exposed to children will result in the children modeling these differences and their subsequent behavior becoming more positive or punitive depending on which show they view. Television can effectively increase or decrease behavior patterns which encourage interpersonal effectiveness. Results in this study on variables related to verbal response patterns and non-verbal response patterns, the content and quality of public broadcasting programs demonstrates a more effective level of interpersonal interaction through role modeling behavior. This appears to offer a model that should seriously be considered by commercial programs. The raters participating in this research project indicated that the social material offered through Sesame Street and Mr. Rogers' Neighborhood encouraged the most positive of social behavior and offered important skills in developing initial stages of effective interaction with peers. This is consistant with the findings of Friedrich and Stein (1973) who examined the social-valued behavior offered by programs such as Mr. Rogers' Neighborhood. Specifically, programming of this type showed greater self control by persisting in tasks, obeying rules and tolerating delays that children are often called upon to handle in every day life situations. Sesame Street and Mr. Rogers' Neighborhood also seem to offer higher levels of effective interaction. The Electric Company was found by raters in

this project to demonstrate higher levels of assertive and aggressive skills than were those offered and identified within either Sesame Street and Mr. Rogers' Neighborhood. Some programs were identified as offering materials that tended to guide parents in skill development with their children. The Children's Television Workshop series involving Sesame Street and Mr. Rogers'Neighborhood emphasized perceptual-motor functioning and materials dealing with social behavior within the context of peer relationships more effectively than any of the commercially produced children's television programs. There is a serious deficit to be realized in several of the cartoon features as they are related to social behavior and social interaction. The frequency and intensity of non-verbal response patterns including hitting, pounding ones head with instruments, and outwitting the opponent by dropping rocks, or other huge materials on the opponent, offers a conceptual framework that fails to consider the viewers ability to imitate and not realize the consequence of his behavior.

The presence of sexual stereotyping in the fifteen television programs researched in this study yielded strikingly similar results as reported by Sternglanz and Serbin (1974). Sex differences were noted in both the number of male and female roles portrayed and in the specific trait behavior attributed to those roles. Whereas males were more often portrayed as competency-based and aggressive, females were more often viewed as nurturant and deferant.

The most consistent content pattern across the commerically produced television series, were the adversary roles presented as models. The Electric Company, which is produced by the Children's Television

Workshop, also develops a higher level of adversary roles than does Sesame Street - with minimal emphasis on adversary positions in the Mr. Rogers series. The implications recognized in the frequency and intensity of adversary role behavior points to a reinforcing agent in developing and enhancing the oppositional tendencies in the child. Since the parents, at this point in time, are the most important persons in the child's life space, there are several implications that require further research but which raise provocative questions related to parent-child relations in today's world.

A study by Stein and Friedrichs (1972) found that when compared to children who viewed neutral films, children who viewed aggressive cartoons showed a significant increase in aggressive behavior from the base line to post-test periods. There were no significant differences in aggression between children exposed to neutral films and children exposed to the Mr. Rogers' Neighborhood series. The present research effort also indicates significant mean differences exist between cartoon animal and cartoon human categories and the public broadcasting - educational category which includes the Mr. Rogers' Neighborhood, Sesame Street and the Electric Company.

With the inclusion of our finding, there appears to be a substantial amount of support for the contention that aggressive television sequences increase children's aggressive behavior and that pro-social television sequences increase children's pro-social behavior. With the exception of the Saturday morning cartoons, as discussed in the Stein and Friedrichs study, this type of research has not extended itself to the differentiation or classification level that has been attempted in this research effort. Certainly the categories dealing

with verbal and non-verbal response patterns have pointed up the significance of these categories for present research.

There remain several variables to consider in the question of the direct effects of television sensory overstimulation and the consequences in human behavior. A pattern case however is emerging more clearly about a technological medium that we know very little about. The impact of television programming on adults and children provides a fertile area for intense research because it is doubtful that any medium has provided the impact television has had on our society. The issue of involuntary subliminal television intoxication has only just emerged on the social psychiatric scene.

FOOTNOTE

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TABLE I

Means and Standard Deviations on Four
Variables Assessed by Indicated Cartoon Classification of Program

	CHILDREN'S TV SHOW TITLE	VARIABLE I LEVEL OF VISUAL STIMULATION		VARIABLE II LEVEL OF AUDITORY STIMULATION		VARIABLE III LEVEL OF VERBAL RESPONSE PATTERNS		VARIABLE IV LEVEL OF NON-VERBAL RESPONSE PATIERNS	
		M	SD	M	SD	M	SD	M	SD
CARTOON ANIMAL CATEGORY									
I	Korg (ABC)	3.10	1.41	3.84	.96	4.66	.92	4.24	1.27
I	Pink Panther (NBC)	3.21	1.46	3.02	1.28	2.64	1.18	2.65	.88
I	Top Cat (CBS)	2.87	1.38	3.39	1.07	3.94	1.21	3.71	1.15
CARTOON SINGLE CATEGORY									
II	Gilligan (ABC)	3.51	1.42	3.89	.94	3.34	1.48	3.07	1.58
II	Fat Albert (CBS)	3.31	1.79	4.69	1.12	3.16	1.24	3.12	1.16
II	Devlin	3.91	1.20	4.20	.83	4.51	1.59	4.93	1.17
CARTOON HUMAN GROUP OR FAMILY									
III	Globetrotters (CBS)	4.90	1.41	5.27	.89	3.89	1.76	3.61	1.45
III	Valley of the Dinosaurs (CBS)	3.17	1.62	3.95	1.14	3.69	1.38	2.81	1.18
III	Addams Family (ABC)	2.78	1.24	3.91	1.16	3.74	1.31	2.91	1.16

Continued...

TABLE II

Means and Standard Deviations on Four
Variables Assessed by Indicated Human Live Action Classification of Program

	CHILDREN'S TV SHOW TITLE	VARIABLE I LEVEL OF VISUAL STIMULATION		VARIABLE II LEVEL OF AUDITORY STIMULATION		VARIABLE III LEVEL OF VERBAL RESPONSE PATTERNS		VARIABLE IV LEVEL OF NON-VERBAL RESPONSE PATTERNS	
		M	SD	M	SD	M	SD	M	SD
HUMAN LIVE ACTION									
IV	Three Stooges (ABC)	2.98	1.40	2.97	1.56	2.66	1.71	1.71	.75
IV	Sigmund (NBC)	3.53	.78	4.31	1.76	3.20	1.46	3.41	1.32
IV	Run Joe Run (NBC)	3.96	1.01	4.17	1.18	4.51	1.70	5.02	1.02
EDUCATIONAL									
V	Sesame Street (PBS)	5.24	1.43	5.82	.94	4.72	1.47	4.35	1.78
V	Mister Rogers' Neighborhood (PBS)	5.15	1.67	4.73	.92	5.97	.89	5.69	.92
V	Electric Company (PBS)	4.10	1.05	5.50	.75	3.91	1.18	4.58	1.61

TABLE III

Means and Standard Deviations for Rated Levels of Visual Stimulation, Auditory Stimulation Verbal Response Patterns and Non-Verbal Response Patterns Across the Five Selected Categories

	CATEGORY I CARTOON ANIMAL		CATEGORY II CARTOON SINGLE		CATEGORY III CARTOON HUMAN GROUP/FAMILY		CATEGORY IV HUMAN LIVE ACTION		CATEGORY EDUCATION/	
VARIABLE	M	SD	M	SD	M	SD	M	SD	M	SI
VISUAL STIM.	3.06	1.39	3.57	1.48	3.61	1.68	3.46	1.16	4.83	1.4
AUDITORY STIM.	3.42	1.14	4.26	1.01	4.36	1.23	3.82	1.61	5.35	1.9
VERBAL RESPONSE	3.75	1.37	3.67	1.54	3.78	1.47	3.45	1.77	4.87	1.4
NON-VERBAL RESPONSE	3.10	1.28	3.71	1.56	3.54	1.29	3.38	1.72	4.88	1.9

TABLE IV

Means, Standard Deviations and t-test for the Cartoon Animal Category and the Educational Category on Level of Visual Stimulation, Auditory Stimulation, Verbal Responses and Non-Verbal Responses

	CATEGORY I CARTOON ANIMAL		CATEGORY V EDUCATIONAL		
VARIABLE	M	SD	M	SD	t
VISUAL STIM.	3.06	1.39	4.83	1.47	8.32**
AUDITORY STIM.	3.42	1.14	5.35	1.97	13.78**
VERBAL	3.75	1.37	4.87	1.45	5.33*
NON-VERBAL	3.10	1.28	4.88	1.57	5.90*

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